Tiny Home UML Documentation

CECS 323 – Database Fundamentals

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Goal/Objective:

Cities across California have come up with a plan to help the homeless population by providing effective solutions to the issue of homelessness. The goal of this tiny home project is to offer temporary housing to homeless people for three to four months, with the hope that they will find permanent housing after that given time. There will be a lot of money being invested into this project which is why the city wants to track its progress and success, this is where the developers come in. The developers should design a database that keeps track of every aspect of the project so that many cities can use the efficient database to track progress.

Information Needed

As developers, we were given the following information that we needed to keep track of and from there we came up with certain classes that would efficiently hold all the information:

1. All of the applicants information: name, age, gender, time being homeless, DOB, and date they applied (Including anything listed on application).
2. The number of people offered housing per year.
3. The number of people who were able to get jobs during the three to four month period.
4. The length of stay per person.
5. The number of people who were able to secure permanent housing.

The database is not as simple as tracking the information of every homeless person given housing. We want to also record how the city and specific organizations are helping. There wouldn't be housing if it weren't for the location and the people who are funding this project.
Therefore, we must also record:

1. The City or Organization or Individuals funding the Tiny Homes.
2. The total amount funded per year.
3. The amount of money that is spent every month and yearly.
4. The amount of housing each Tiny Home location can offer.
5. The location or address of each home.
6. The amount of beds filled and the amount empty or the capacity.

Explanation of Classes:

Note: the classes we decided to create are bolded, the constraints are integrated into the definition so for clarity we italicized the explanation of constraints*

I.   Funder

As of right now a **funder**, which would either be a city, organization, or single person will fund a specific community. *The funder can choose to finance one or many Contributions, it's truly up to them.* As the organization responsible for the project, we want to make sure to keep track of the name, phone number, address, affiliation and amount that this specific organization gave to the project. This is necessary for their tax exemptions and for our records to track how much is being funded into our project.

II.   Contribution

To address the possibility of a funder financing multiple communities we added a Contribution class. *A Contribution will only be financed by one funder.* This means that a funder will donate a certain amount of money and from there they will choose which community they want to finance. Each of our *communities may be supplied funding by one to many Contributions.* In this class we will need to hold how much the funder has donated and the date that they gave a donation.

III.   Community and Tiny Homes

Through these funds a **community** will be able to operate and serve the community. Each community will reside in a specific State, City, and will have a general street address. We would also like to keep track of the amount of years this community has been up and running. *These communities will have a couple dozen **Tiny Homes** if not more*. So this begs the question: how will we be able to tell the homes apart? Well, each home will have a House Number, keep in mind it is not the same as a street address. Each of these homes can be occupied by at most one person at a time. Lastly, we need to keep track whether that certain tiny home is available and ready to be occupied. We will track this with a boolean value, if true then the house is available and if false, the home is occupied and not available. Each community will offer a specific community capacity. This means that there will be a capacity goal for the tiny homes. For example, San Jose's current community can hold 70 tiny homes. So we added attributes that would model capacity from each community.

IV.   Expenses

Every community will have **Expenses**. *This will keep track of every expense that each* community *will have, which might consist of many per* community. In order to account for the changes in bills we decided to add an enumerated type of bill. This enumeration will account for

different types of bills like foodExpensesBill, internetBill, waterBill, GasElectricityBill, and propertyTaxesBill. The amount is for the type of bill that is being paid for.

V.   <u>Person</u>

For every tiny home, *there may or may not be* a **Person** occupying there. Each person needs to apply to be able to live in the tiny home. Their basic information is recorded so that it can be determined whether they are eligible to live there or not. We also track if they have been offered housing or not, because a person may have applied but they may or may not have been offered the housing option. We want to also keep track of how long they have been without permanent housing (homeless) using an integer for length based on days. They may or may be staying at shelters so we also added a Current Situation attribute and left this as a string so we could add a small explanation. Their basic information will be a strings including Gender because some may identify as non-binary or transdenger so we will also leave that as a string.

VI.   <u>Program Enrollment</u>

Unfortunately, many homeless people struggle (keep in mind not everyone struggles) with drug use which is why it is important for us to give them the support necessary to overcome their addiction. Once we determine what kind of help they need the **Program Enrollment** will track the information of the date enrolled and the recovery program they have been enrolled in. *A person can choose to enroll in many programs.*

VII.   <u>Recovery Program</u>

The database will hold a list of recovery programs where we have the names of programs that we have paired up with to assist people. **Recovery Program** will assist program enrollment by having that list ready for them to pick from. *Recovery program will assist zero or many program enrollments.*

VIII.   <u>Employment</u>

Every single person will have to apply for **Employment**, so that they have the opportunity to eventually move out of the tiny house to a more permanent residence. *A person might not have employment right away, or they might have multiple jobs.* We track information like hourly wage so we can appropriately move them out of the tiny house when they are able to. We need to also track the company that they are working for so that we can see the type of work they will be doing.

IX.   After Stay

The goal of this tiny home project is to offer temporary housing to homeless people for three to four months, with the hope that they will find permanent **After Stay** after that given time. This project is meant to help shape these individuals to become members of society. If we offer permanent housing we won't be able to help as many people. The housing class will keep track of the amount of time the individual stayed in the tiny homes (1- 4 months) and if the goal was met. The goal being them moving out by four months or if they are still homeless. Finally, were they able to secure housing: yes or no. There will be individuals who do find secure housing after but there is always the possibility that they might not have housing after. *A current resident will not have an after stay because they have not yet left and residents may re enroll for multiple stays. Therefore, a person may have 0 to many after stays.*